DISSERTATION

FOR THE AWARD OF DEGREE

MASTER OF HOSPITAL ADMINISTRATION

SESSION 2022-2024

A STUDY

the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad.

SHEETAL RANA

DEPARTMENT OF HOSPITAL ADMINISTRATION

SANTOSH DEEMED TO BE UNIVERSITY

NO. 1, SANTOSH NAGAR, GHAZIABAD-201009,

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I hereby declare that Santosh Deemed to be University, Ghaziabad, (U.P) shall have the right to preserve, use and disseminate this Dissertation title " **A Study the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad.**" In print or electronic format for academic or research purpose.

Signature of Candidate Sheetal Rana.

Date: 6/8/24

Place: Ghaziabad

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DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation title " **A Study the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad.**" is a bonfide genuine research work carried out by me under the esteemed guidance of my Guide **Dr. Saumya Sajiv Kumar Sharma, Assistant Professor**, Department of Hospital Administration Santosh Deemed to be University, Ghaziabad, (U.P)

Signature of Candidate Sheetal Rana.

Date: 6/8/24

Place: Ghaziabad

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This is to certify that the dissertation title " **A Study the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad.**" is a bonafide genuine research work carried out by Sheetal Rana in partial fulfilment of the requirement for the degree of Master in Hospital Administration under my supervision and guidance in department of Hospital Administration Santosh Deemed to be University, Ghaziabad, (U.P)

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The Registrar

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Sub: - Registration of Dissertation for Master of Hospital Administration

I requested you to kindly consider and register the subject of my **Dissertation** entitled **"A Study the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad."** for the year 2022-2024 with the view to appear in MHA. Examination in 2024.

The Dissertation of the thesis with four copies and necessary particulars are enclosed herewith.

Thank you

Yours truly

SHEETAL RANA Sheetal Rana.

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ANTIPLAGRISM DECLARATION/UNDERTAKING

I, **SHEETAL RANA**, hereby declare that the present thesis entitled **"A Study the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad, India" . submitted** by me to Santosh University is an original research work. The present research work has not been submitted for the award of any degree/diploma of the same Institution or to any other Institution, where the work was carried out.

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I have verified the contents of the Dissertation, and it has less than 10% similarity.

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I bow with reverence, all humility and gratitude to thank The Almighty for giving me the opportunity to undertake this work and the ability to successfully complete it.

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I feel great honor to express my deep sense of gratitude and obligation to my most revered teacher, and genius mentor **Dr. Manish Sabharwal MD, MEM, MBA HOD Department of Hospital Administration, Santosh Medical College & Hospital,** Ghaziabad for her perseverance supervision, unending support.

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Santosh Medical College and Hospital, Ghaziabad. for their invaluable guidance, support, and encouragement. Their insightful feedback and unwavering belief in my abilities have been instrumental in the successful completion of this research.

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I bow my head in sincerely acknowledging to all my patients who kindly consented to become the subjects of this thesis. Without their cooperation this study would not have seen the light of the day.

Sheetal Rana

2022-2024

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ABBREVIATIONS

Sr No	Abbreviation	Full form
1.	WHO	World Health Organization
2.	CAPA	Corrective And Preventive Action
3.	PPE	Personal Protective Equipment
4.	HAI	Health care Associate Infection
5.	HCW	Health Care Workers
6.	IPC	Infection Prevention and Control
7.	HCF	Health Care Facility
8.	JCI	Joint Commission International
9.	IOM	Institute of Medicine

INTRODUCTION

INTRODUCTION

Rise of communicable illnesses such as COVID-19, mers, Ebola, hin, etc. has caused a rise in the requirement for personal protection equipment use among lab technicians, nurses, and other healthcare professionals. are more likely to contract diseases, either directly or indirectly, and PPE acts as a shield to keep them safe. Pandemics and reemerging diseases are designed to make personal protective equipment (PPE) more essential for healthcare personnel. The personal protective equipment (PPE) includes eye protection gloves, an apron, a gown, boots, shoes, hair covers, and face shields like safety glasses, nose masks, and goggles to protect the face and eyes. Additionally, work shoes with shoe covers and puncture-resistant soles shield the foot, hats shield the head, earplugs shield the ears, and appropriately sized hand gloves shield the hands.

When it comes to protecting mucous membranes, airways, skin, and clothing from infectious agents, personal protective equipment (PPE) refers to physical barriers that can be used alone or in combination. Healthcare workers who directly care for patients and who may come into contact with blood, bodily fluids, excretions, and secretions should wear PPE. Employee support, such as laundry and cleaning personnel, in circumstances where they might come into contact with bodily fluids like blood or secretions or excretions Workers in the

laboratory who handle patient specimens relatives who look after patients and may come into contact with bodily fluids such as blood or secretions or excretions; Workers at a haemodialysis facility, because to the elevated risk of blood-borne infection transmission during the numerous tasks related to equipment handling and haemodialysis: and Patients in a Haemodialysis Unit, as a covering for clothing during the cannulation and decannulation procedures, as well as the connection, disconnections, and dressing changes of central lines. PPE consists of face protection, boots, a hair cover or cap, gloves, aprons, and gowns. PPE, or personal protective equipment, is crucial for shielding employees from a range of hazards at work.

PPE is defined by the Occupational Safety and Health Administration (OSHA) as a range of protective gear and apparel intended to shield employees from hazards to their health and safety. Physical dangers, chemical exposures, biological threats, and ergonomic difficulties are a few examples of these risks (OSHA, 2021)

Numerous research and regulatory frameworks have emphasized the significance of personal protective equipment (PPE) and its role in preventing injuries and fatalities in a variety of sectors. For example, the National Institute for Occupational Safety and Health (NIOSH) emphasizes that by putting a barrier between the worker and potential dangers, good PPE can greatly minimize the risk of illnesses and accidents at work (OSHA, 2022). Simple goggles and gloves

to more sophisticated systems like respiratory protective equipment and full-body suits are examples of this protective gear.

1. **Types of Personal Protective Equipment**

   PPE includes a broad range of devices used to protect specific body parts and lessen different kinds of risks. Among them are:

2. **Head Protection:** Hard hats and helmets guard against impacts, electrical hazards, and falling items that could injure the head. The American National Standards Institute (ANSI) states that in order for head protection to effectively safeguard workers, equipment must adhere to a set of standards (ANSI, 2020).

3. **Protection for the Eyes and Face**: Safety goggles, face shields, and glasses are made to keep the eyes and face safe from things like radiation, flying debris, and chemical spills. Guidelines for the use and testing of face and eye protection devices are provided by the American Society for Testing and Materials (ASTM) (ASTM, 2021).

4. **Hearing Protection**: To avoid tinnitus and hearing loss in loud surroundings, earmuffs and earplugs are a must. According to the National Institute for Occupational Safety and Health (NIOSH), noise-induced hearing loss can be avoided with the right hearing protection (NIOSH, 2022).

5. **Protection for the Respiratory System**: Masks and respirators guard against breathing in chemicals, dust, and fumes. Fit testing and conformity to guidelines established by agencies like NIOSH are necessary to ensure that respiratory protection is effective (NIOSH, 2022).

   Protection for the Hands and Arms: Gloves and arm protectors guard against burns, wounds, and chemical exposure. The particular risks that exist in the workplace will determine which hand protection is appropriate (Smith, 2019).

6. **Foot and Leg Protection**: Safety boots and leggings are designed to protect against injuries from falling objects, sharp materials, and electrical hazards. The American Society for Testing and Materials (ASTM) provides standards for evaluating the protective qualities of footwear (ASTM, 2021).
7. **Body Protection**: This category includes protective clothing such as coveralls, aprons, and suits designed to shield the body from chemical spills, thermal hazards, and biological contaminants. The selection and use of body protection must be based on a thorough assessment of potential risks (OSHA, 2021).

Importance of PPE in Workplace Safety

The riskto read Prevention (CDC) shows that regular use of spite them

significance.

PPE's efficacy may be harmed by problems like uncomfortable use, poor instruc tion, and misuse.

Consequence’s Significance for Workplace SafetyUsing PPE properly is essential workplace safety because it acts Sang controls are unable to completely remove risks

Proper PPE use can considerably loweof illness and injury, according to search that has been routinely Conducted.

In highrisk industries like construction and manufacturing, for instance, a study conducted by the Centers for Disease Control personal protective equipment (PPE) has significantly reduced worker injuries (CDC, 2023).

AIM

&

OBJECTIVES

AIM OF THE STUDY

To Study the knowledge of Personal protective equipment's among the health careprovider of a tertiary care teaching hospital in Ghaziabad.

OBJECTIVES OF THE STUDY

1.To asses the Knowledge of health care provider regarding PPE

2.To suggest recommendations if any, to close the gap.

REVIEW

OF

LITERATURE

REVIEW OF LITERATURE

The literature review is an extensive, systematic selection of potential sources of previous work, which acquaints the investigator with fact-finding work after scrutinization. Polit and Hungler state that the literature review provides readers with a background for understanding the significance of the study.

A review of the literature is a critical step in the research process. A literature review refers to an extensive, exhaustive, and systematic examination of publications relevant to the research project.

1.Daddario et al [(1)] 2007 conducted study conducted at M bagathi Hospital in Nairobi, Kenya, the utilization of PPE is under question in Africa, as only 17.8 % of the health care workers know the elements of infection prevention standard precautions, and poor compliance with infection prevention practice in the health care setting is influenced bythe socio demographics characteristics of the healthcare

2.Bijoy et al[(2)] 2020 Descriptive Study to Assess the Knowledge and Practice on Personal Protective Equipment among Student Nurses in a Selected College of Nursing, New Delhi. A Quantitative Research

approach along with Descriptive Research design was used. A total of 110 student nurses were selected through Convenient Sampling Technique from DGNM 3rd Year, B.Sc. (Hons.) Nursing 2nd Year and B.Sc. (Hons.) Nursing4th Year of Rufaida College of Nursing, Jamia Hamdard, New Delhi in the month of July- August 2020. Structured Questionnaire was used via an online platform (Google forms) due to Covid 19 lockdown to assess the knowledge and practice on PPE. Out of 110 samples, 66 (60%) had good knowledge, followed by 44 (40%) having average knowledge and none were having poor knowledge on PPE, whereas 67 (60.9%) had an average practice, followed by 41 (37.3%) having good practice and only 2 (1.8%) had poor practice on PPE. Findings suggest that there is a need for practice-based knowledge assessment in clinical areas and thus improvement in the practice of PPEwhile working in hospitals.

3.A similar study was conducted by **Archana Lakshmi PA** et.al[(3)] on personal protective equipment use among health care providers. A cross-sectional study was conducted fromNovember 2014 to October 2015 in two tertiary health care institutions in Tamil Nadu, toevaluate the appropriate use of PPE among health care providers. Total participants were1060, health care providers i.e., Doctors, nurses and technicians who had more than oneyear of experience participated in the study. Data collected by

pretested structured questionnaire and data analysis was done using SPSS 20v and summarized by descriptivestatistics. Proportion and Chi-square was calculated at 5% α. The result showed that among 862 HCPs who work outside the operation theatre and ICUs, appropriate uses of PPE were only 156 (18.1%). The reasons for inappropriate use of PPE were 'non-available'562 (78%) followed by 'not aware of the importance' 77 (11%). Findings of the study concluded that inappropriate use and lack of adequate knowledge on infection control practices emphasizing that periodic re-training is needed.

4.Dominic Savio lavanya et al [(4)](2020) studied on Assessment of Knowledge, Attitude, and Practices of Personal Protective Equipment among Health Care Providers in Tamil Nadu, South India. International Journal of Occupational Safety and Health, among 386healthcare workers in Tamil Nadu, South India. The structured self-administered questionnaire was used for data collection. The study comprised questions evaluating a socio-demographic profile, knowledge, attitude, and practice of personal protective equipment. Descriptive statistics (percentage, frequency, mean) and inferential statistics(Chi-square test) were used for the data analysis. The overall knowledge of the participants was satisfactory (73.3%). Physicians had a good knowledge level against non-physicians ($p<0.05$). It

was observed that the 30 and more years of experience group has less knowledge ($p<0.05$). A positive attitude toward PPE was noted in 58.3% of the participants. Statistical significance in the attitude of participants with education, occupation, and experience was not observed ($p>0.05$). Good practice of PPE was followed by 66.8% of participants. Nurses(91.7%) showed good practice of PPE thanphysicians and laboratory technicians and was found to be statistically significant ($p<0.05$)

5.**Niharika B**[(5)] et al (2021) A cross sectional study of knowledge and cross-sectional study of knowledge and practice with regard to personal protective equipment in Covid -19 management among health care workers at a tertiary care center of Ananth puram District, Andhra pradesh . A cross-sectional study was conducted at the Coveatid Care Center of a tertiary Care Hospitals of Ananth puram district among healthcare staff using a pre-structured closed-ended questionnaire regarding socio demographic details and usage of personal protective equipment. The score obtained was classified as good if thescore ranges from 6 to 8 & poor if the score is from 0 to 5. 28 out of 64 subjects (43.7) had good knowledge & practice regarding PPE kit usage. Majority of them had given correct responses for PPE kit components, wearing mask and disposal of PPE while most of them scored poorly in donning and doffing steps, wearing gloves and foot covers.

6.Alao M.A.[6] et al. study conducted in Nigeria ,majority of the respondents were medical doctors followed by nurses and clinical students. Among them, only 25.7% had adequate knowledge about PPE. Of the respondents who presumed they had adequate knowledge about donning and doffing PPE,56% were incorrect. The predictors of good knowledge were ages younger than 45 years and practice location.

7. **S. Chia**[7] **et al.** Study conducted during SARS outbreak in Singapore, a total of 32.5% of doctors,48.7% of nurses, and 77.1% of the administrative staff agreed that paper and/or surgical mask were "useful in protecting from contracting SARS"; the risk of using a less effective level of respiratory protection was lowest among doctors, followed by nurses and clerical staff which is comparable with the present study.

8.**Abrar Ahmad Chughtai**[8] et al. conducted study on health care workers regarding the use of face mask and respirators, the results showed that health care workers had a limited role in the selection and use of face mask and respirators and had been using the devices provided by the hospital. Most of the health care workers had no knowledge of hospital policy for the use of face masks and respirators was low and face masks and respirators were easy to don nd doff, compliance with use of face masks and respirators was low and face masks and respirators were typically used only for short periods of time. Most

of the study subjects believed that PAPRs (Powered Air-Purifying Respirators) provided higher protection, comfort and re usability over N95 FFR (filtering face piece respirators) and can be used during pandemics HCWs should be aware on infection control policies and adequate training should be provided on the correct use of respirators protective devices.

9.Baduge et al. (2020)[9] found that the knowledge gap about correct PPE use was more prominent among non-clinical staff, highlighting the necessity for comprehensive training programs that cover all types of healthcare professionals. Moreover, Mahmood et al. (2019) discovered that HCWs in low-resource settings were particularly vulnerable to PPE shortages, which had a direct impact on their knowledge and use of PPE.

10.Tietjen et al.[10] (1998) found that focused training programs greatly increased the right usage of PPE among HCWs. Similarly, Verbeek et al. (2020) discovered that simulation-based training improved knowledge and abilities related to PPE usage, resulting in higher compliance and lower infections.

11.Mahmood et al.[11] (2019) discovered that HCWs in low-resource settings were especially vulnerable to PPE shortages, which influenced their knowledge and use of PPE.

12.According to Phan et al.[12] (2019), pain, interference with patient care, and the perceived inconvenience of PPE were key factors contributing to non-compliance among healthcare workers.

13.Qureshi et al.[13] (2019) found that the availability of PPE and the appropriateness of training were important factors of proper PPE use, with HCWs frequently claiming a lack of training as a reason for inappropriate use.

14.Gammon et al. [14](2008) found that, while most HCWs were aware of the necessity of PPE, there were considerable gaps in understanding about its usage, particularly donning and doffing procedures. Similarly, Askarian and Aramesh (2006) discovered that compliance with PPE use was uneven, frequently due to a lack of training and knowledge of the recommendations.

15.A study by Moyo et al[15]. (2018) in Zimbabwe indicated that healthcare professionals had a moderate degree of understanding regarding PPE, but practical implementation was hampered by variables such as insufficient supplies and time restrictions.

16.According to research conducted in Saudi Arabia by **Alraddadi et al[16]. (2016),** while HCWs had excellent understanding of PPE, compliance was unsatisfactory, particularly during non-emergencies.

17.Anderson et al.[17] (2011) found that incorporating PPE instruction into routine induction and occasional refresher courses helped increase compliance. Furthermore, Wong et al. (2019) recommended for the use of technology, such as mobile apps and e-learning platforms, to provide accessible and ongoing instruction on PPE use.

18.Armstrong et al.[18] (2020) hypothesized that enhancing the design and comfort of PPE could improve compliance, as discomfort has been a key barrier to proper use.

19.Chersich et al.[19] (2020) discovered that the virus's rapid spread and global PPE shortages raised awareness but also caused significant stress among HCWs regarding PPE use. These research emphasized the importance of real-time training and revisions to PPE recommendations in response to the pandemic's shifting nature.

20.A Study by Lee et al[20]. (2017) highlighted that misconceptions about the effectiveness of certain PPE types also contributed to improper used.

21.A study by Brown et al.[21] (2018), common barriers include insufficient supply, lack of training, and discomfort associated with prolonged used.

22.A study by walker et al.[22] (2015) found that regular refresher courses were necessary to maintain high levels of compliance and knowledge retention.

23.A study by Davis et al.[23] (2014) indicated that hospitals with stringent PPE policies had higher compliance rates among HCWs .

24.A Study by Thompson et al[24]. (2013) emphasized the need for continuous monitoring and evaluation of PPE practices to ensure adherence to guidelines .

25. A study by Wilson et al.[25] (2012) suggested that more research is needed to develop effective training programs tailored to different healthcare settings.

26.A study by Parker et al.[26] (2011) identified a need for better communication strategies to address misconceptions and improve knowledge dissemination .

MATERIAL

&

METHODS

MATERIAL & METHODS

Location: -

The present study entitled "**To Study the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad, India."** was conducted in the Santosh Hospital Ghaziabad.

Study Design: -

This is an observational, cross-sectional, descriptive study undertaken to assess the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital.

Sample size: -

The sample size of the present study was calculated by using module for determining the frequency of a factor in a population. Sample sizes are provided for confidence levels from 90% to 99.99%. The calculated sample size came out to be 230.

Time Period :-

The study is undertaken for a duration of 1 Year.

Inclusion Criteria:-

- The health care providers who completed B.SC, BMLT, G.N.M, MBBS. The staffwho are not available at the time of data collection in the hospital The medical staff who are available in hospital at the time of data collection.

Exclusion Criteria:-

- Those medical staff who are not willing to participate The medical staff who are not available at the time of data collection in the hospital The staff nurses who doesn't fulfill the Inclusion criteria of the study.

Methodology:-

- The non-probability sampling technique is used, and the data is collected by a structured questionnaire, administered by the researcher to assess the knowledge.
- All the question in the questionnaire is both close and open ended.
- The tool is translated in local language and administered to the staff nurses.

The structured questionnaire of biomedical waste management is made after referring the rules and various previous studies. The questionnaire is then translated to Hindi language which is the local language of the area. Where the study is undertaken.

Data management and analysis :-

- All the result entered into MS office, Spread Excel sheet and analyzed in Statistical Package for the Social Science version (SPSS version 22).

The result is expressed in numbers, percentage, tables, charts etc. Descriptive statistics are calculated through cross-tabulation

RESULT

Data management and analysis:-

This study investigates the knowledge of Personal Protective Equipments among nurses, with a sample size of 230 participants. The primary aim was to assess the knowledge related to the handling and use of personal protective Equipments, a critical aspect of healthcare that ensures both workers safety and occupational health. Data collection was conducted using an electronic form (e-form), allowing for efficient and comprehensive gathering of information. The e-form included a series of structured questions designed to evaluate the nurses' knowledge with established Personal protective Equipment protocols. Findings from this study highlight the current knowledge levels, identify gaps, and suggest areas for targeted training and policy improvements to enhance the effectiveness of Personal Protective Equipment in healthcare settings.

Data Collection and Time Period :-

The data was collected from April 2024 to June 2024. Approval from the medical ethics committee of Santosh Medical College was taken prior to starting the study. All respondents were briefed about the objectives of this study and confidentiality of information was assured to the respondents. A e-form (questionnaire) which translated in both Hindi and English were distributed to the total of 230 nurses and their response were collected in spread sheet for

further study. Data was represented in tables, percentages and Figures.

Tools of Data Collection :-

A semi-structured questionnaire in electronic form was used as the tool for data collection. (Annexure 1).

The questionnaire had Two Part: The first part consisted of demographic information; second part consisted of three section A, B, C and had knowledge related questions about personal protective equipment

The first part of the questionnaire collected information related to demographic variables of the study participants including:

1. Name (optional) of the respondents
2. Gender (male, female)
3. Age (taken in years)
4. Qualifications (divided into four categories depending on the education status of the participants as G.N.M, B.Sc nursing, BMLT, MBBS
5. Experience (in years)

The second part related to knowledge regarding Personal protective Equipment. This part consisted of 12 multiple choice questions each of which had one correct answer. It was divided into three section A, B and C for the purpose of better analysis and scoring.

Statistical Analysis :-

All the result entered MS office, Spread Excel sheet and analyzed in Statistical Package for the Social Science version (SPSS version 25).

The result is expressed in numbers, percentage, tables, Figures etc. Descriptive statistics are calculated through cross-tabulation.

Fig :1 Counts of Gender

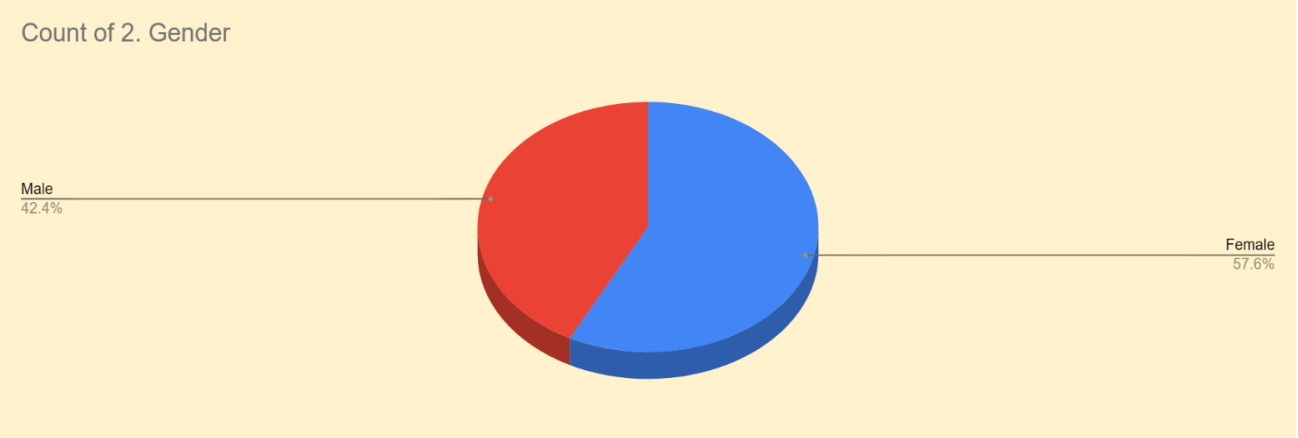
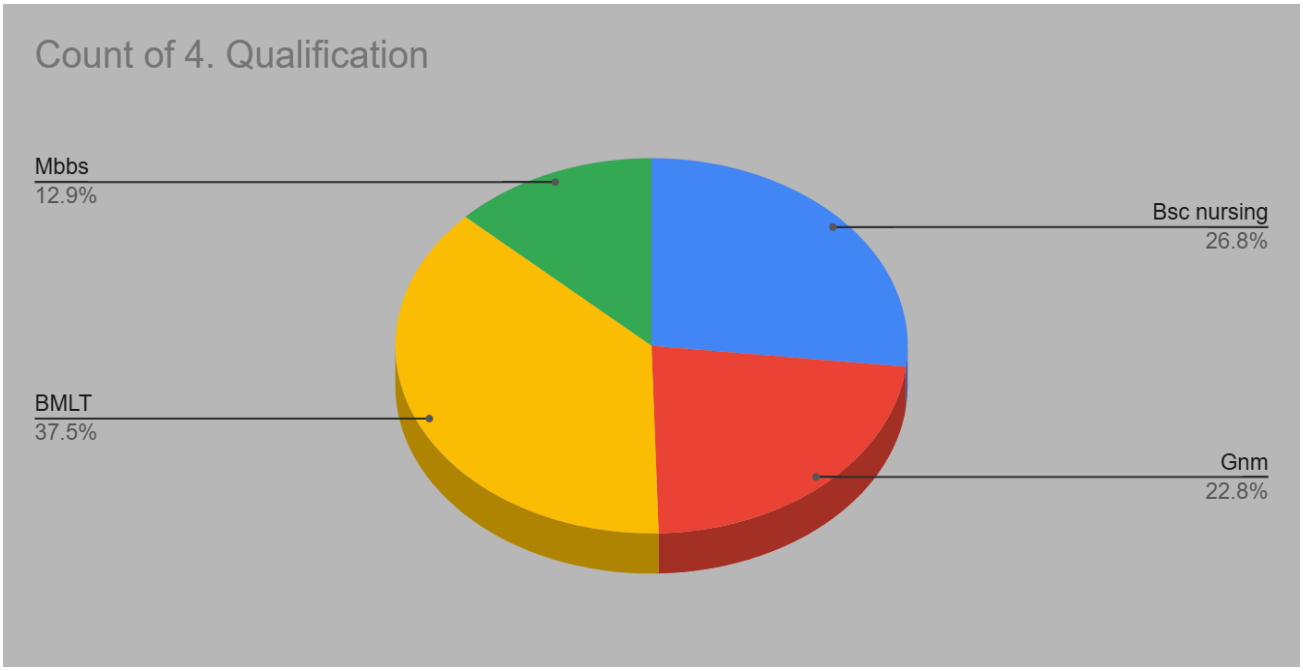


Fig :1 Total of 224 respondents (42.4%.) were males and (57.6 %) were females

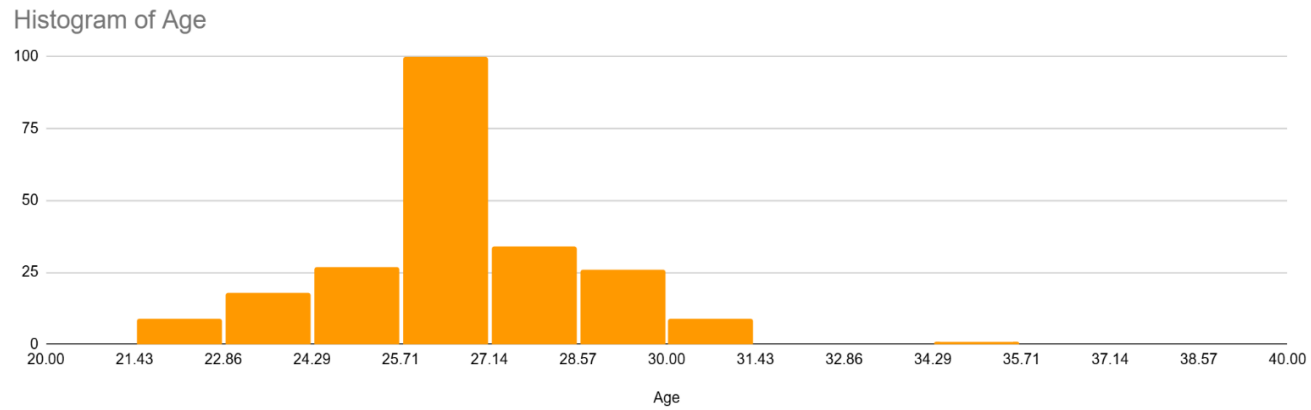
.

Fig :2 COUNT OF QUALIFICATION



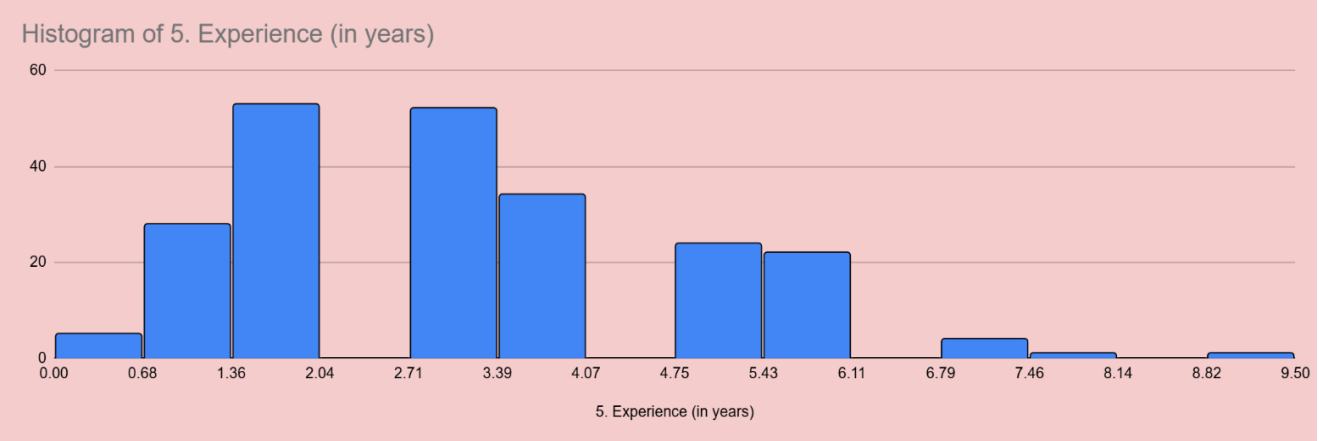
Total of 224 respondents (12.9%) MBBS qualified, BSC Nursing qualified (26.8%) and BMLT Qualified(37.5%) , GNM qualified (22.8%).

Fig :3 HISTOGRAM OF AGE



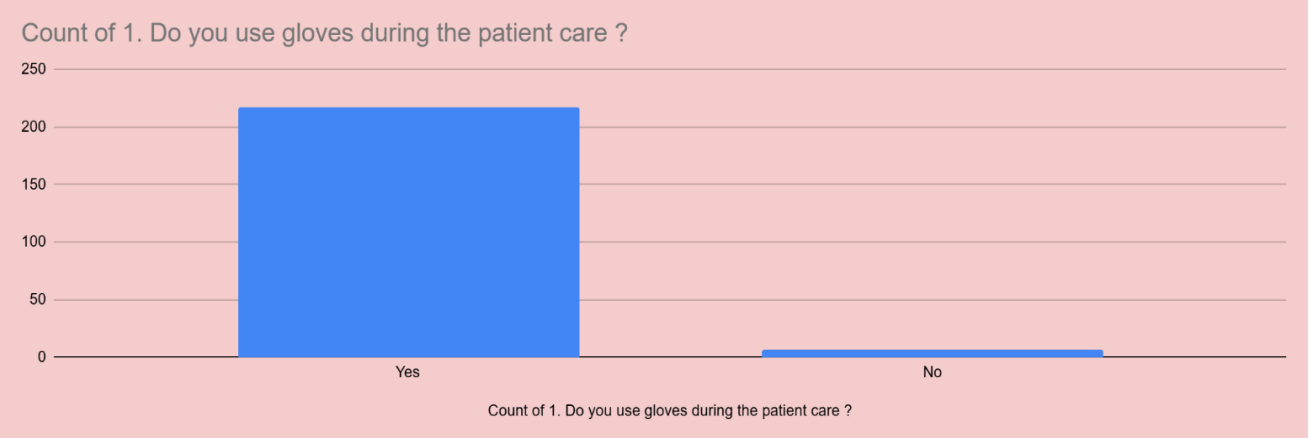
Total of 246 respondents about 80% respondents aged between 20 - 30 and restare more than 30. (Figure 3)

Fig.4 HISTOGRM OF EXPERIENCE



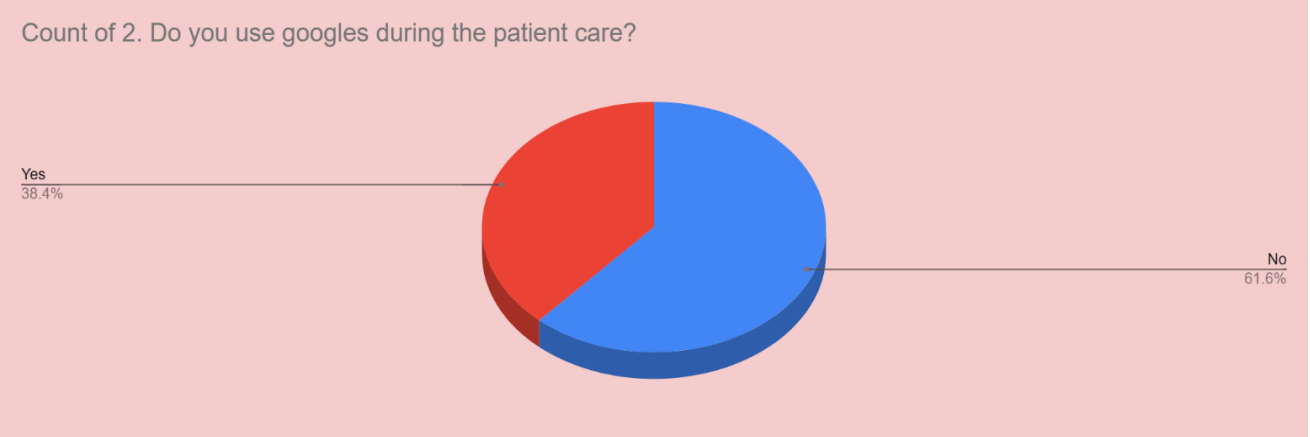
Total of 224 respondents about(2%)had experience 0 years and about 12.5% had experience 0-1 year and 23.6% had experience 1-2 years. And 23.21% had experience 2-3years and 15.1% had experience 3-4 years and 10.71% had experience 4-5 years and 9.8% had experience 5-6 years and 1.7% had experience 6-7 year and 0.44% had experience 8 -10 years.

Fig.5 Count of using gloves during the patient care



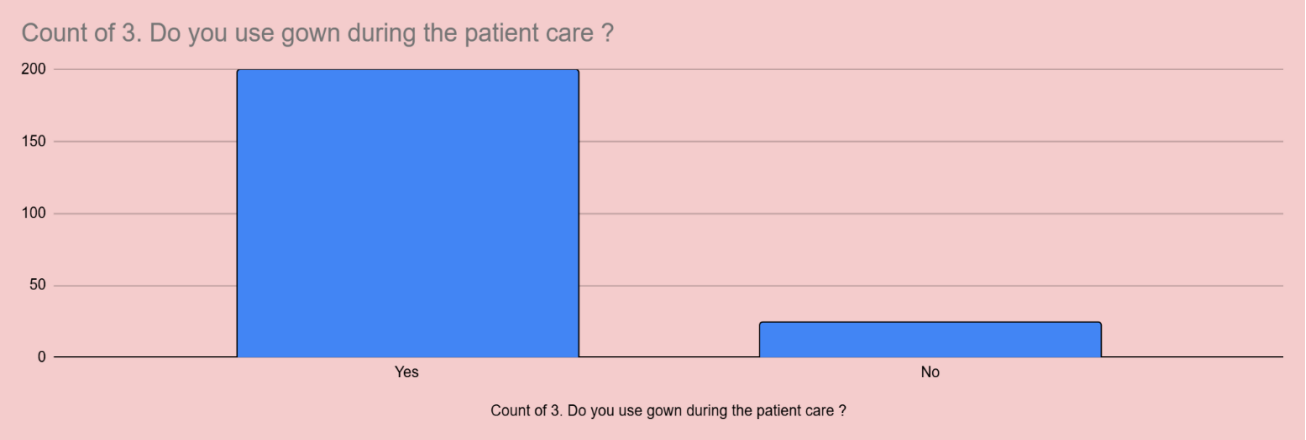
Total respondents using gloves YES - (38.4%) NO -(61.6%)

Fig.6 Count of using goggles during the patient care.



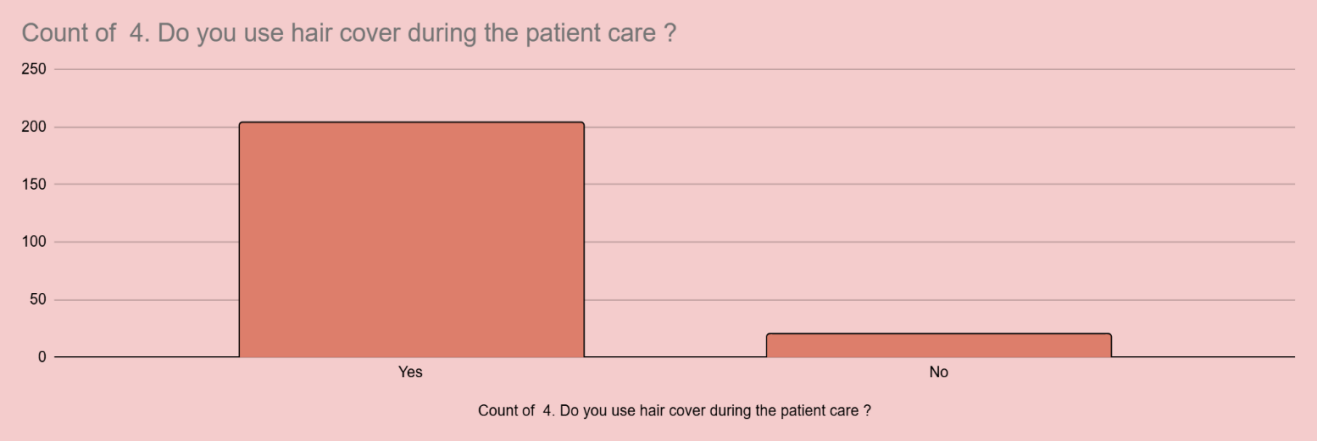
Total respondents using googles YES - (38.4%) NO -(61.6

Fig.7 Count of using gown during the patient care



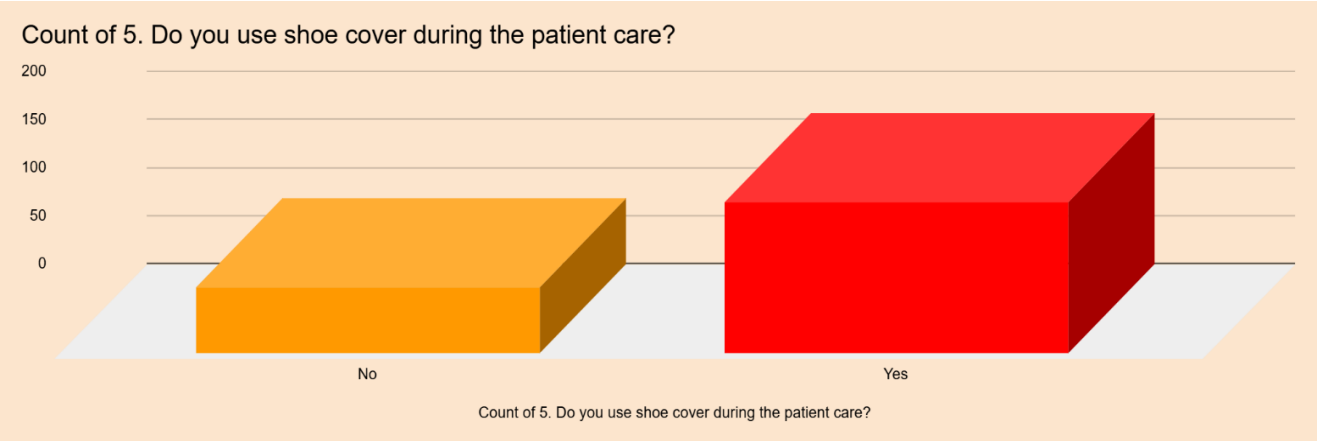
Total respondents using gown YES - (90.8%) NO -(10.7%)

Fig.8 Count of using hair cover during the patient care.



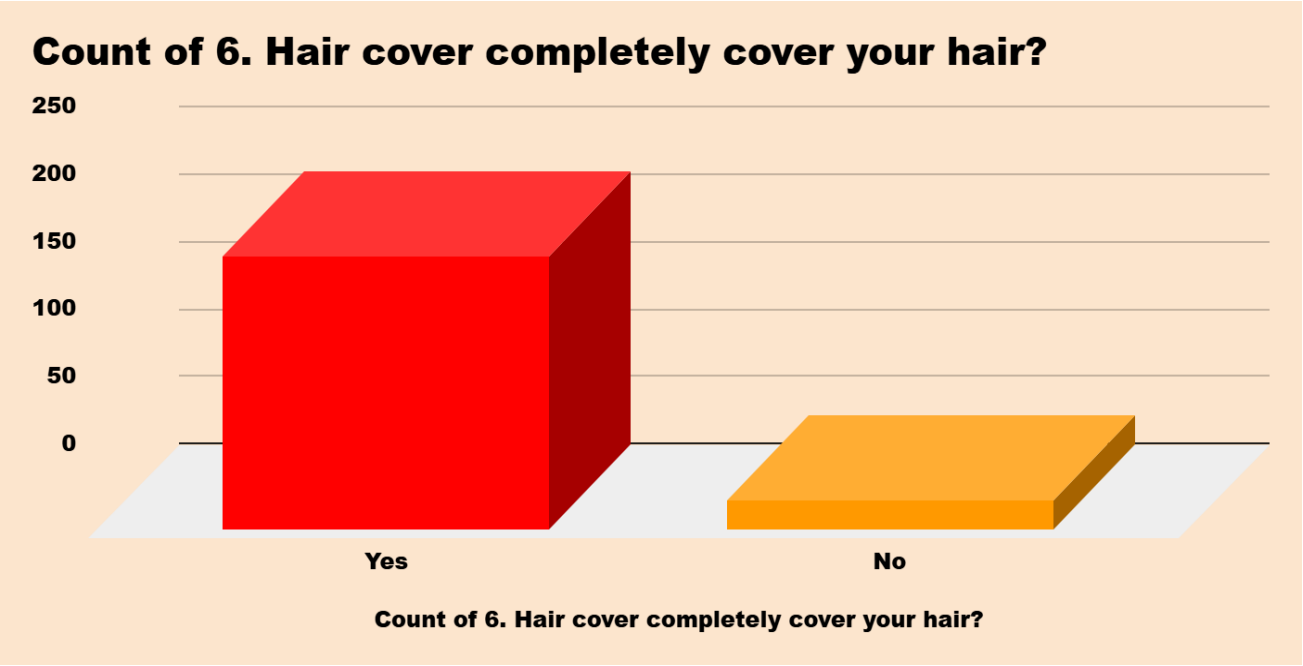
Total respondents using Hair cover YES - (90.4%) NO -(9.8%)

Fig 9. Count of using shoe cover during the patient care.



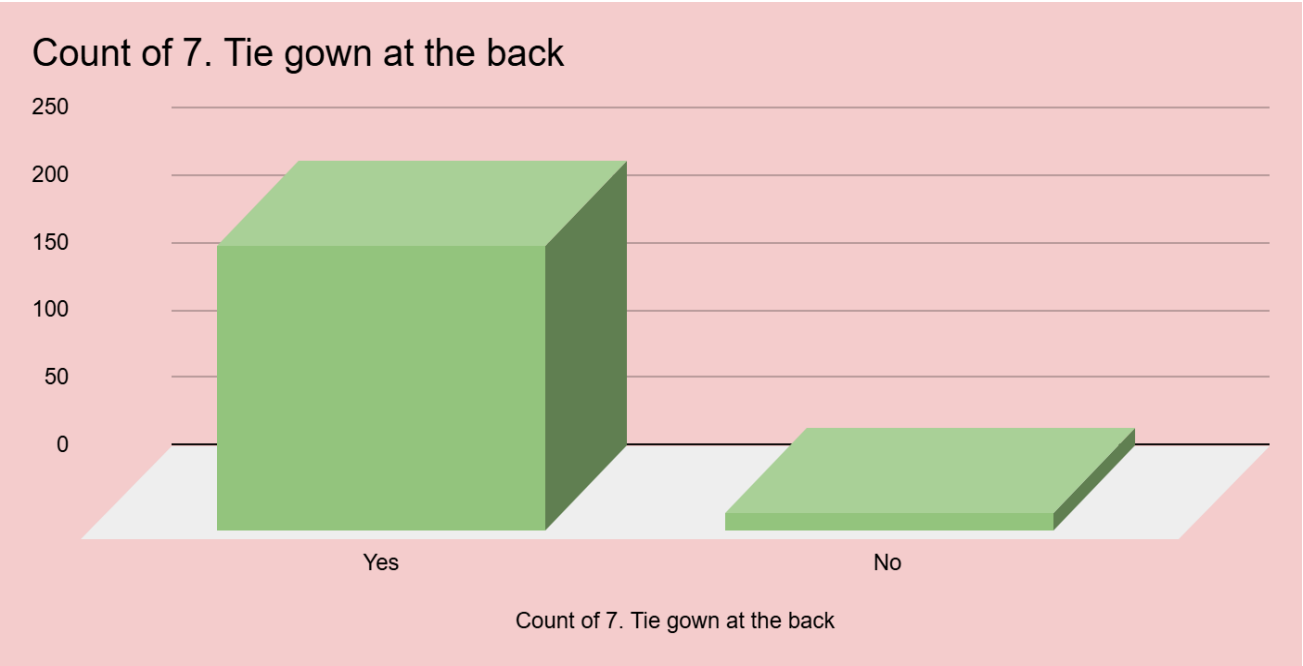
Total respondents using Shoe cover YES - (69.6%) NO -(30.4%)

Fig 10. Count of using hair cover during the patient care.



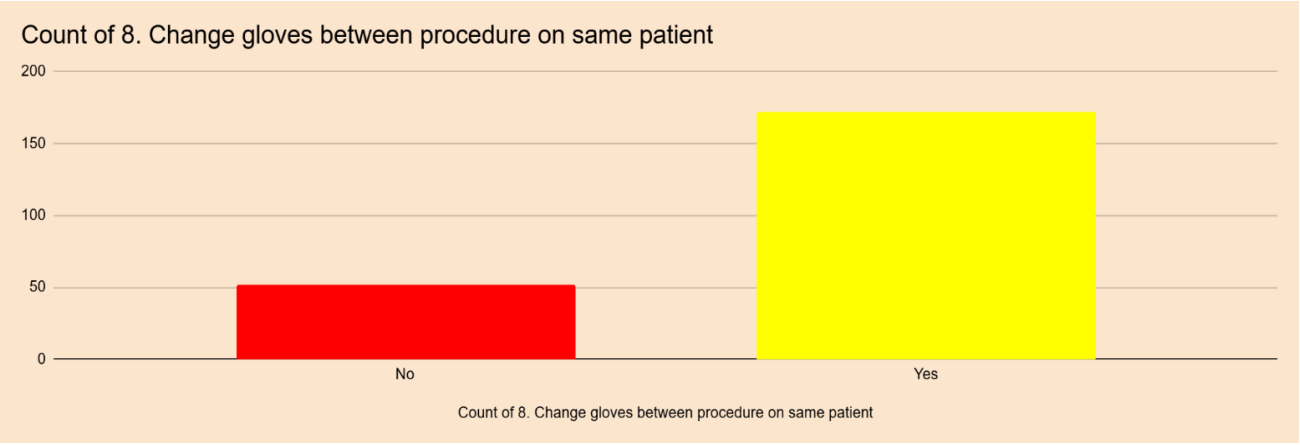
Total respondents using Hair cover YES - (90.4%) NO -(9.8%)

Fig 11. Count of tie gown at the back



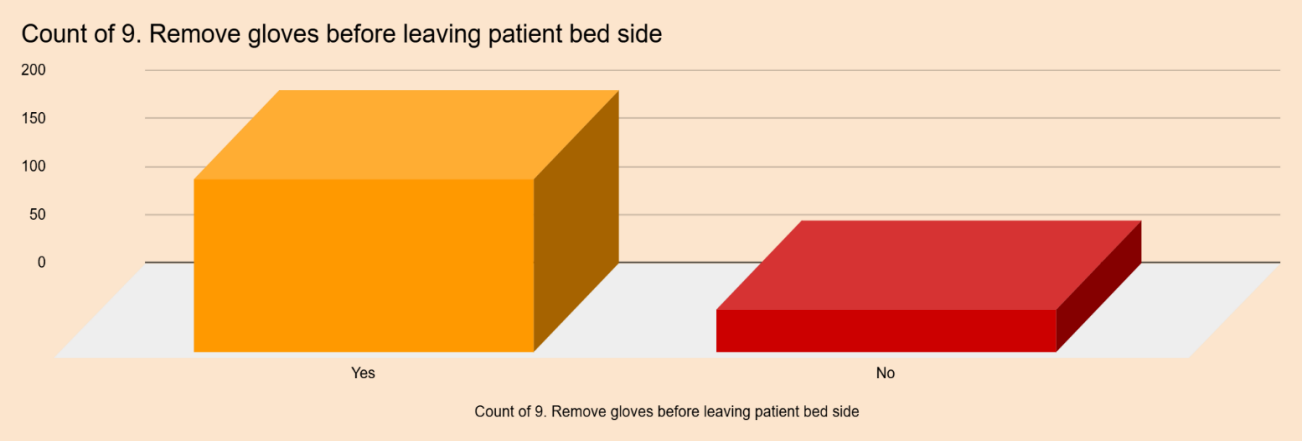
Total respondents tie gown at the back YES - (90.8%) NO -(5.8%)

Fig.12 Count of change gloves between procedure on same patient.



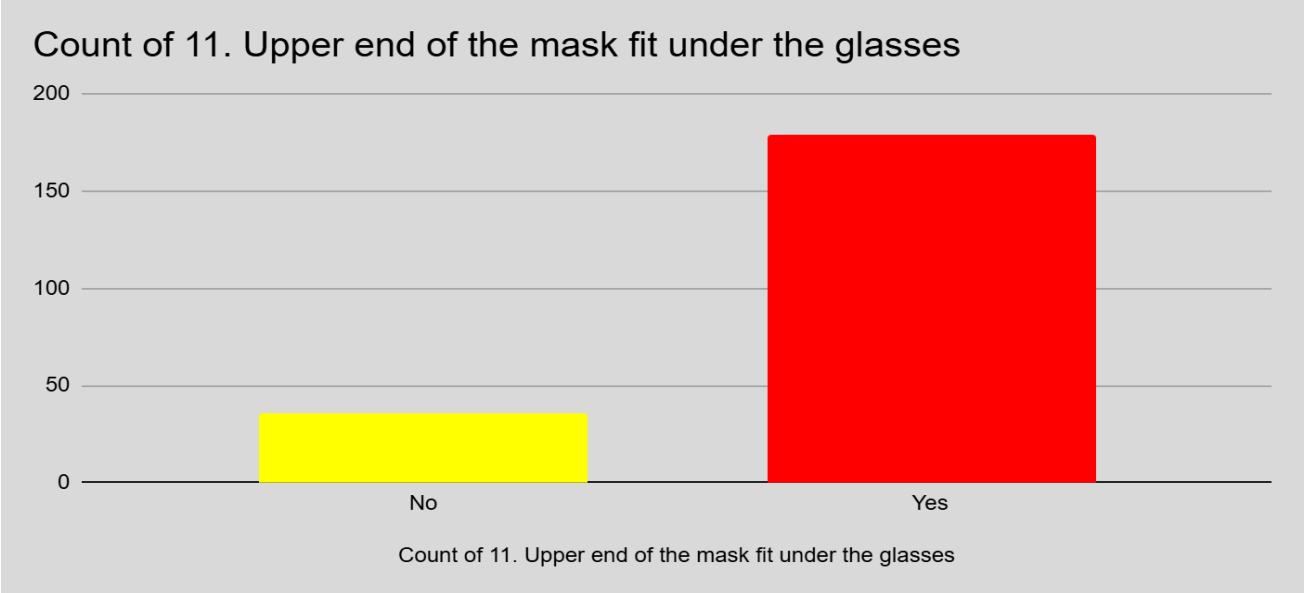
Total respondents change gloves between procedure on same patients YES - (76.8%) NO -(23.2%)

Fig 13. Count of remove gloves before leaving patient bed side.



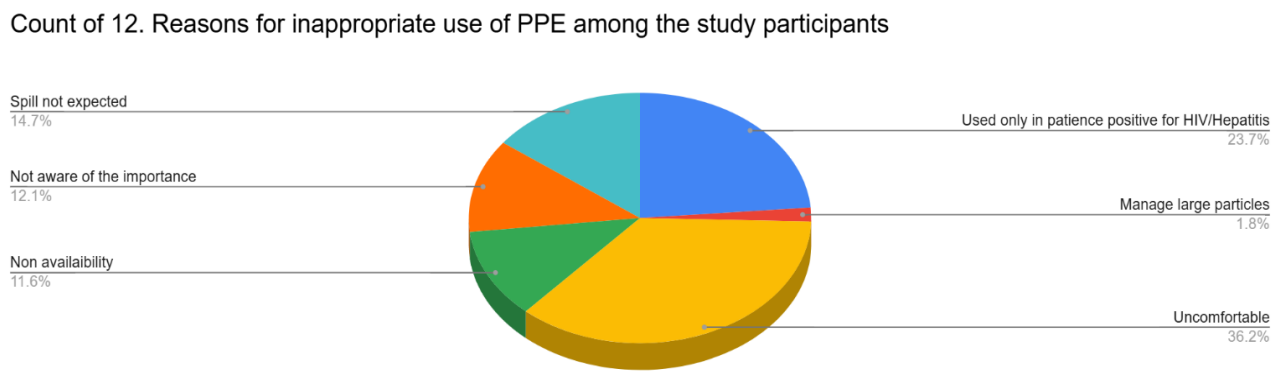
Total respondents remove gloves before leaving patient bed side YES - (80.4%) NO -(19.6%)

Fig 14. Count of mask fit end the glasses.



Total respondents comfortable to wear glasses YES - (83.3%) NO -(16.7%)

Fig.15 Reasons FOR inappropriate use of PPE among the study



Total respondents who are not using PPE kit properly reasons are 1. spill not expected (14.7%) 2. used only in patience for HIV/hepatitis (23.7) 3. Not aware of the importance(12.1%) 4.Manage large particles(1.6%) 5.Non availability(11.6%).

Table :1 Questions and correct /incorrect responses %

Questions / Answers	Correct responses%	Incorrect responses %
1. Do you use gloves during the patient care?	96.9%	3.1%
2. Do you use goggles during the patient care?	38.4%	61.6%
3.Do you use gown during the patient care?	89.3%	10.7%
4.Do you use hair cover during the patient care?	90.4%	9.8%
5.Do you use shoe cover during the patient care?	69.6%	30.4%
6.Hair cover completely cover your hair?	90.4 %	9.8 %
7. Tie gown at the back	90.8 %	5.8%
8. Change gloves between procedure on same patient	76.8 %	23.2%
9. Remove gloves before leaving patient bed side?	80.4 %	19.6 %

DISCUSSION

Total of 224 respondents 42.4% males and 57.6% females. BSC nursing qualified(26.8%0 BMLT(lab technicians) qualified(37.5%).GNM qualified.(22.8%)MBBS qualified(12.9) Figure 3 about 80% respondents aged between 20 - 30 and rest are more than 30.Figure 4 respondents about(2%)had experience 0 years and about 12.5% had experience 0-1 year and 23.6% had experience 1-2 years. And 23.21% had experience 2-3years and 15.1% had experience 3-4 years and 10.71% had experience 4-5 years and 9.8% had experience 5-6 years and 1.7% had experience 6-7 year and 0.44% had experience 8 -10 years.

Especially in economically challenged countries, the use of personal protective equipment (PPE) in the healthcare context is crucial in preventing hospital-acquired illnesses. However, the results of this investigation showed that there is a gap in the application of PPE.

About PPE, 130 people (90.3%) had strong knowledge, which increased in comparison to a study of the same kind that was done at Stevens Lumber Mills Hospital in South Africa [47 %] (28). Additionally, this study demonstrated that healthcare professionals who had taken part in PPE-related training were more knowledgeable than those who had never taken part in such training. Compared to nurses (84.3%) and health officials (96.2%), doctors and midwives had higher

knowledge (100%) but this difference was not statistically significant

CONCLUSION

Conclusion

This study demonstrated improper use and insufficient understanding of infection control procedures, highlighting the necessity of frequent retraining. Although there was a decent level of knowledge on PPE utilisation, there was a low level of practice. To increase PPE utilisation, healthcare professionals' workloads must be reduced, and PPE supplies must be improved.

Personal Protective Equipment (PPE) is critical for protecting people's health and safety in a variety of settings, including healthcare, industry, and emergency response. This dissertation investigated the role of PPE in decreasing exposure to hazardous substances, lowering the risk of damage, and preventing the spread of infectious diseases.

Gloves, masks, gowns, and eye protection are examples of personal protective equipment (PPE). In healthcare settings, PPE is critical for protecting healthcare personnel from pathogen exposure and preventing infection transfer to patients. The COVID-19 pandemic underlined the crucial relevance of personal protective equipment (PPE), as its availability and proper usage were directly linked to the safety of healthcare personnel and the larger community (Chughtai et al., 2020). Beyond healthcare, PPE is essential in industries such as construction, manufacturing, and chemical processing, where workers are exposed to physical, chemical, and biological risks.

Proper use of PPE considerably minimizes the incidence of injuries and occupational illnesses, resulting in safer working conditions (Zhao et al., 2016). However, the success of PPE is determined not only by its availability, but also by its use, training, and maintenance, as well as adherence to safety standards (Ndejjo et al., 2015).

Despite its importance, there are still hurdles to ensuring that PPE is used consistently and effectively. These include supply chain management, user compliance, and the balance between safety and comfort. The pandemic highlighted the necessity for strong supply chains and the development of PPE that provides both high levels of protection and wearer comfort, encouraging long-term use (Rowan & Laffey, 2020).

In conclusion, personal protective equipment (PPE) is an essential component of workplace safety and public health. Its role in protecting people from a wide range of risks, from infectious diseases to chemical exposures, emphasizes its crucial importance. Future research and policy development should concentrate on enhancing the design, accessibility, and training of PPE, ensuring that it is properly integrated into safety practices across all key sectors. By tackling the issues associated with PPE use, we may improve worker and public safety, lowering the risk of injury and disease in a variety of setting

Recommendations

Improved Training Programs: Put in place thorough training courses covering every facet of Personal protective equipment. To guarantee ongoing education and adjustment to new regulations, these have to incorporate hands-on workshops and frequent refresher courses.

I**nstructional Resources:** To emphasize the significance of appropriate Personal Protective equipment, create and disseminate easily understood instructional resources including pamphlets, posters, and digital content.

Regular Assessments: Conduct periodic assessments to evaluate the knowledge and practices of healthcare workers regarding Personal protective equipment . Use the findings to identify gaps and areas needing improvement.

Strict Enforcement of Regulations: Ensure strict adherence to Personal Protective Equipment regulations through regular audits and inspections. Establish penalties for non-compliance to emphasize the seriousness of proper waste handling.

Incentive Programs: Introduce incentive programs to encourage and reward proper use of personal protective equipments practices among healthcare workers. Recognition and rewards can motivate staff to adhere to best practices consistently.

Community Awareness: Extend awareness programs to the community to inform them about the importance of Personal protective Equipment and how they can contribute to reducing risks associated with improper disposal.

Regular monitoring of the hospital settings through routine culture swabs. By implementing these recommendations, healthcare facilities can significantly improve their Personal Protective Equipments. practices, ensuring a safer environment for both healthcare workers and the community.

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Annexure

ANNEXURES

S.No	Annexures	Page no.
1.	Questionnaire	55-57
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ANEXXURE 1

Part 1. Demographic Variables

S. No क्र. सं	Demographic Variables जनसांख्यिकीय चर	
1.	Name (optional) नाम (वैकल्पिक)	
2.	Gender/ लिंग	
3.	Age/ उम्र	
4.	Qualification/. योग्यता	
5.	Experience (yrs.)/ अनुभव (वर्ष)	

Knowledge statements: -

1. Do you use gloves during the patient care?

(yes\no)

क्या आप रोगी की देखभाल केदौरान दस्तानेका उपयोग करतेहैं (हांनहीं)

2. Do you use goggles during the patient care? (yes \no)

क्या आप रोगी की देखभाल केदौरान चश्मेका उपयोग करतेहैं?

(हांनहीं)

3. Do you use gown during the patient care? (yes \no)

क्या आप रोगी की देखभाल केदौरान गाउन का उपयोग करतेहैं?

(हांनहीं)

4. Do you use hair cover during the patient care? (yes \no)

क्या आप रोगी की देखभाल केदौरान हेयर कवर का उपयोग करतेहैं? (हां नहीं)

5. Do you use shoe cover during the patient care? (yes \no)

क्या आप रोगी की देखभाल केदौरान जूता कवर का उपयोग करतेहैं?

(हांनहीं)

6. Hair cover completely cover your hair. (yes \no)

हेयर कवर आपकेबालों को पूरी तरह सेढक देता है

(हांनहीं)

7. Tie gown at the back. (yes \no)

गाउन को पीछेबांधें (हां नहीं)

8.Change gloves between procedure on same patient. (yes \ no)

एक ही मरीज की प्रक्रिया केबीच दस्तानेबदलें (हां नहीं)

9.Remove gloves before leaving patient bed side. (yes \no)

रोगी को बबस्तर केपास छोड़नेसेपहलेदस्तानेहटा दे

10. Correct size gloves.

सही आकार केदस्ताने

11.Upper end of the mask fit under the glasses.

मास्क का ऊपरी बसरा चश्मेकेनीचेक्रिट होता है।

12. Reasons for inappropriate use of PPE among the study participants.

अध्ययन प्रबतभाबगयों केबीच पीपीई केअनुबचत उपयोग केकारण

a. Non availability

एक अनुपलब्धता

b. Not aware of the importance

महत्व केबारेमेंपता नहीं

c. spill not expected

बस्पल अपेबित नहीं है

d. Used only in patience positive for HIV/Hepatitis.

के वल एचआईवी/हेपेटाइटटस केबलए सकारात्मक रोगी मेंउपयोग क्रकया जाता है

e. Uncomfortable

असहज

F. Manage large particles

बड़ेकणों को प्रबांबधत करें

SANTOSH
Deemed to be University
(Established u/s 3 of the UGC Act, 1956)

F. No. SU/R/2024/1344[32] Dated: 17.05.2024

Subject: Grant of Ethical Clearance for **Dissertation Protocol** Topic **"Personal Protective Equipments Among Health Care Providers of a Hospital",** submitted by **SHEETAL RANA,** student of Master in Hospital Administration, 2022 Batch.

*****

With reference to the request for grant of Ethical Clearance for the Dissertation Protocol entitled **"Personal Protective Equipments Among Health Care Providers of a Hospital", SHEETAL RANA** is informed that the **Dissertation Protocol** submitted by him/her was considered by the **Screening Committee** of the **Allied Health Sciences** in its meetings held on 07.02.2024 and 29.02.2024. The recommendations of the **Screening Committee** were considered in detail by the **Institutional Ethics Committee** in its meeting held on **15.05.2024** and the same was **approved** by the **Ethics Committee** of the **Santosh Deemed to be University, Ghaziabad, Delhi NCR**.

He /She is informed accordingly for further necessary action.

17/5/24

[Dr. EZHILRAJAN. K]
REGISTRAR

SANTOSH DEEMED TO BE UNIVERSITY REGISTRAR GHAZIABAD, NCR DELHI

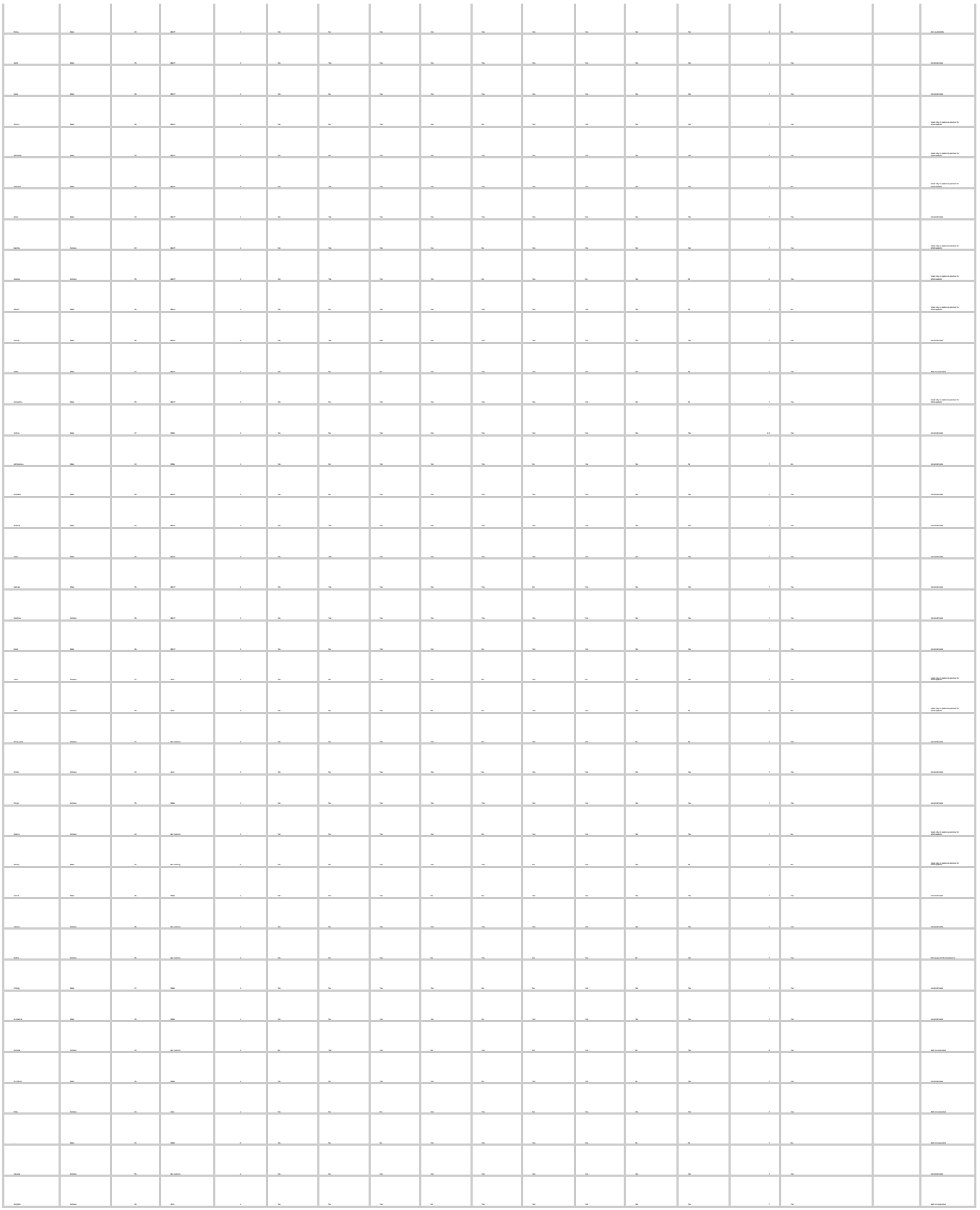
SHEETAL RANA
Master in Hospital Administration.

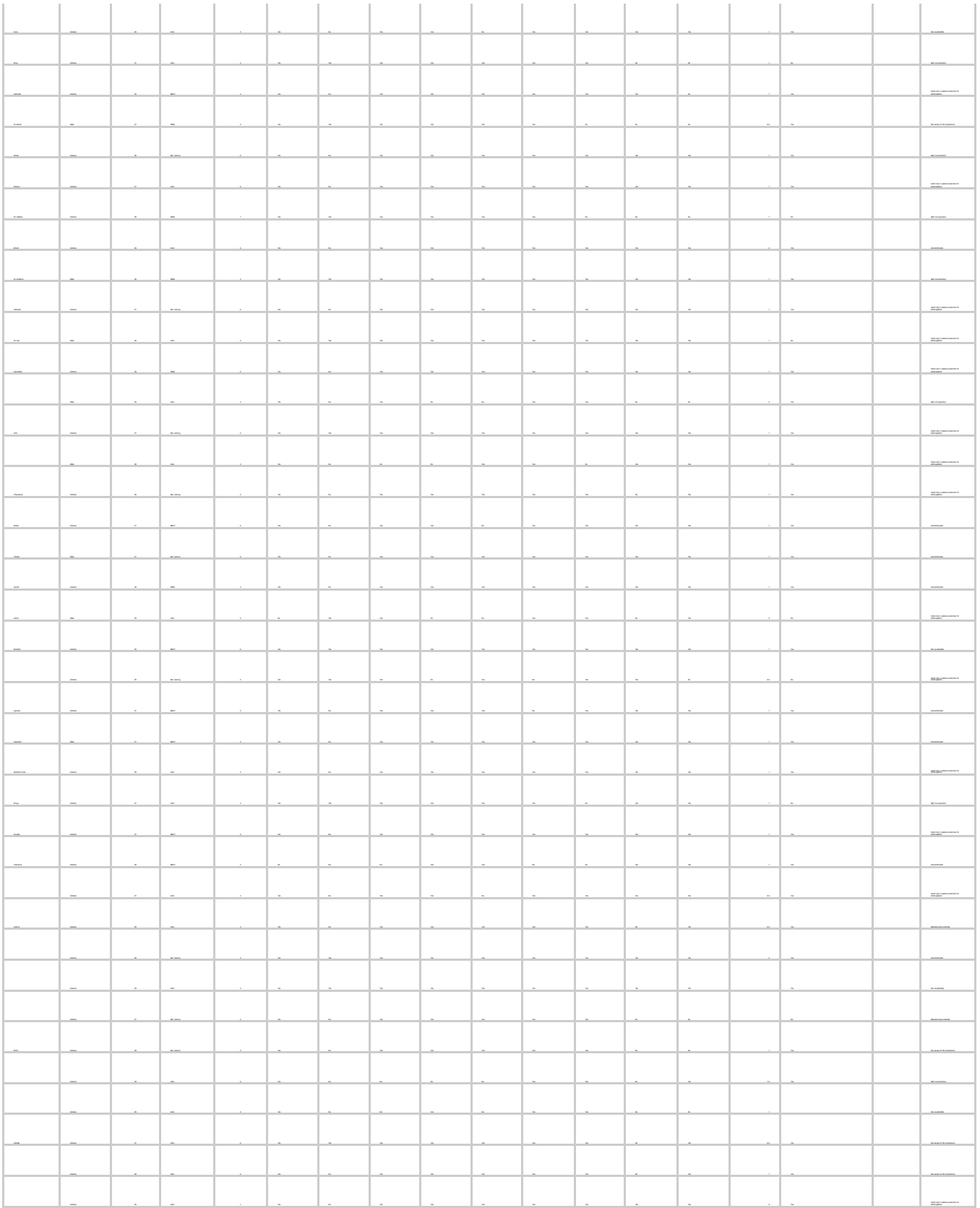
Copy to:

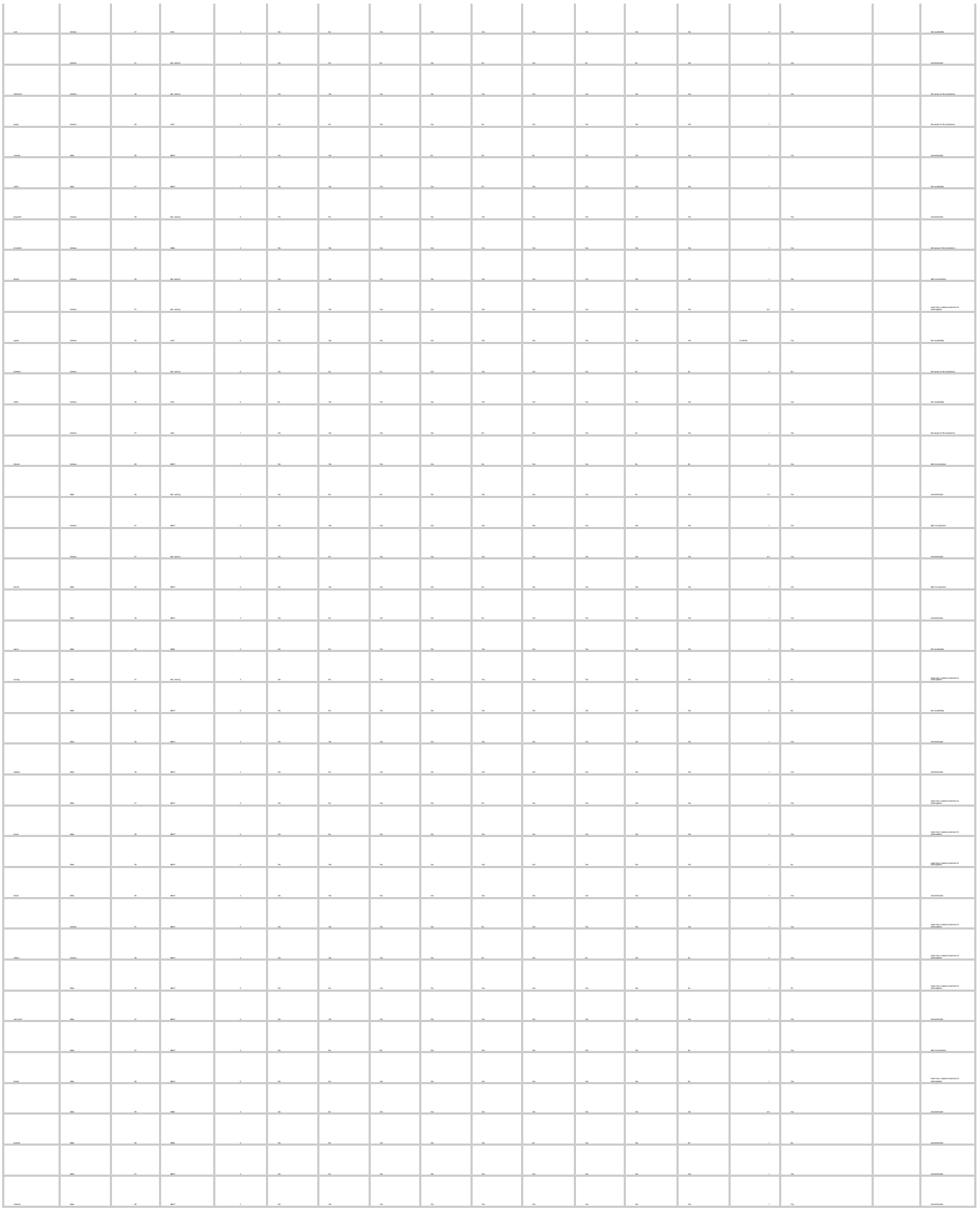
1. The Vice Chancellor
2. The Dean – Academics
3. The Dean, SMC&H
4. The Dean – Research
5. The Director - IQAC
6. HOD/ Course In-charge of the concerned Department.

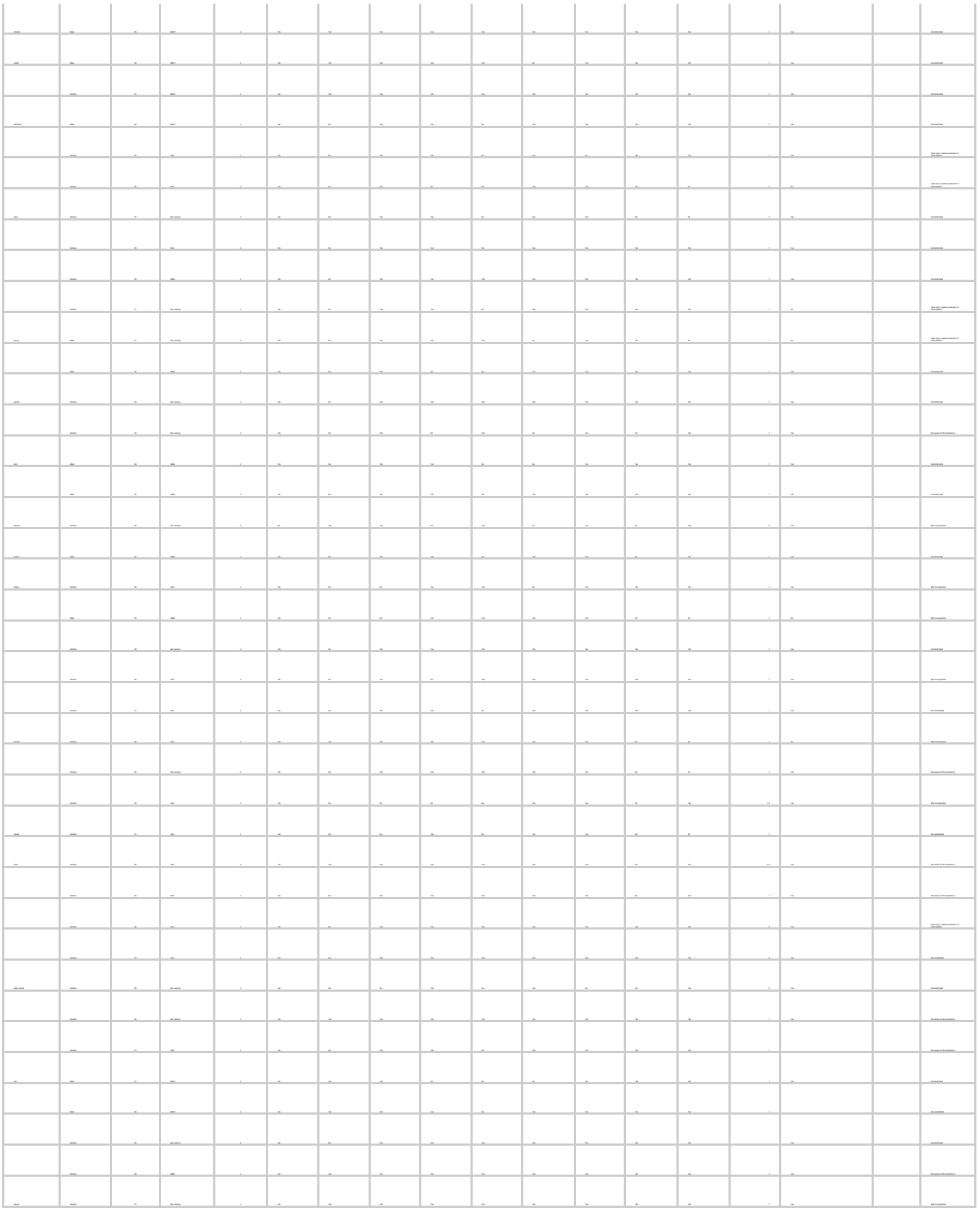
ANEXXURE 3

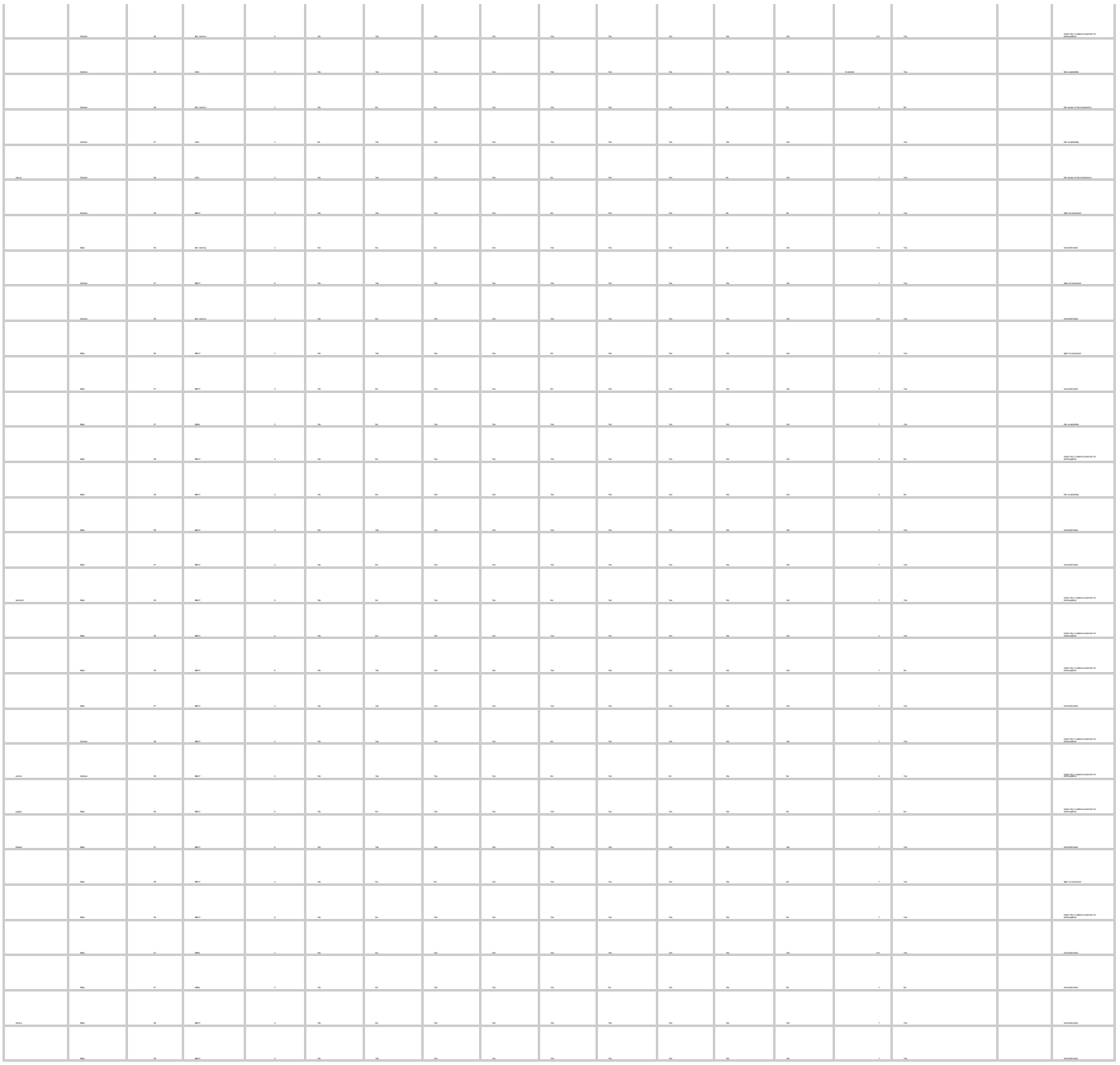
Master Data Sheet











ANEXXURE 4

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To Whom It May Concern

This is to certify that the sample size recommended for the research thesis titled **"**To study the knowledge of Personal Protective Equipment among the health care provider in a tertiary care teaching hospital in Ghaziabad, India.**"** by Mr./**Ms.**/Dr. SHEETAL RANA, Department of Hospital Administration (PhD/MD/MS/MDS/MSc/MHA) Batch-(2022-24) has been carefully assessed and authenticated by the Assistant Prof-Cum Bio-statistician of Santosh Deemed to be University.

This certificate is issued based on the examination and review conducted by the Biostatistician, confirming adherence to statistical principles and practices.

Date :
Signature:
Dr. Amod Kumar
(**Assistant Professor cum Bio-Statistician)**
Department of Community Medicine,
Department: Santosh Deemed to be University Ghaziabad, Delhi (NCR)

ANEXXURE 5

CONSENT FORM

SANTOSH MEDICAL COLLEGE AND HOSPITAL (GHAZIABAD)

INFORMED CONSENT

I_____Son/Daughter/Wife of_____resident of _____.

hereby declare that I give my full, free, and voluntary informed consent in the thesis –**"**To study the knowledge of Personal Protective Equipment among the health care provider in a tertiary care teaching hospital in Ghaziabad, India.**",**_____has informed me to my satisfaction, in the language I understand, about the purpose, nature of the study and various investigations for the study to be carried out. I have been informed about the duration of the study and instructions to be followed during the study period. I give full consent for being enrolled in the above study and I reserve my rights to withdraw fromthis study, whenever I wish without prejudice of my right to undergo further treatment at SantoshHospital, Ghaziabad U.P.

Signature of
candidateor thumb
impression

Name: Date:

We have witnessed that the candidate signed the above form in the presence of his free will after fully understanding its content.

Signature of Witness

Name

Signature of Investigator Name:
SHEETAL RANA Designation: PG
Department of Hospital
Administration

Contact No.8447683680

ANEXXURE 6

A STUDY the knowledge of Personal protective equipment's among the health care provider of a tertiary care teaching hospital in Ghaziabad

ORIGINALITY REPORT

4%
SIMILARITY INDEX

PRIMARY SOURCES

1	www.simonsfoundation.org Internet	144 words — 4%

EXCLUDE QUOTES	ON	EXCLUDE SOURCES	< 10 WORDS
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